

STEVEN P. JOBS, 1955-2011

## *Apple's Visionary Redefined Digital Age*

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By John Markoff

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Steven P. Jobs, the visionary co-founder of Apple who helped usher in the era of personal computers and then led a cultural transformation in the way music, movies and mobile communications were experienced in the digital age, died Wednesday. He was 56.

The death was announced by Apple, the company Mr. Jobs and his high school friend Stephen Wozniak started in 1976 in a suburban California garage. A friend of the family said the cause was complications of pancreatic cancer.

Mr. Jobs had waged a long and public struggle with the disease, remaining the face of the company even as he underwent treatment, introducing new products for a global market in his trademark blue jeans even as he grew gaunt and frail.

He underwent surgery in 2004, received a liver transplant in 2009 and took three medical leaves of absence as Apple's chief executive before stepping down in August and turning over the helm to Timothy D. Cook, the chief operating officer. When he left, he was still engaged in the company's affairs, negotiating with another Silicon Valley executive only weeks earlier.

"I have always said that if there ever came a day when I could no longer meet my duties and expectations as Apple's C.E.O., I would be the first to let you know," Mr. Jobs said in a letter released by the company. "Unfortunately, that day has come."

By then, having mastered digital technology and capitalized on his intuitive marketing sense, Mr. Jobs had largely come to define the personal computer industry and an array of digital consumer and entertainment businesses centered on the Internet. He had also become a very rich man, worth an estimated \$8.3 billion.

Tributes to Mr. Jobs flowed quickly on Wednesday evening, in formal statements and in the flow of social networks, with President Obama, technology industry leaders and legions of Apple fans weighing in.

"For those of us lucky enough to get to work with Steve, it's been an insanely great honor," said Bill Gates, the Microsoft co-founder. "I will miss Steve immensely."

A Twitter user named Matt Galligan wrote: “R.I.P. Steve Jobs. You touched an ugly world of technology and made it beautiful.”

Eight years after founding Apple, Mr. Jobs led the team that designed the Macintosh computer, a breakthrough in making personal computers easier to use. After a 12-year separation from the company, prompted by a bitter falling-out with his chief executive, John Sculley, he returned in 1997 to oversee the creation of one innovative digital device after another — the iPod, the iPhone and the iPad. These transformed not only product categories like music players and cellphones but also entire industries, like music and mobile communications.

During his years outside Apple, he bought a tiny computer graphics spinoff from the director George Lucas and built a team of computer scientists, artists and animators that became Pixar Animation Studios.

Starting with “Toy Story” in 1995, Pixar produced a string of hit movies, won several Academy Awards for artistic and technological excellence, and made the full-length computer-animated film a mainstream art form enjoyed by children and adults worldwide.

Mr. Jobs was neither a hardware engineer nor a software programmer, nor did he think of himself as a manager. He considered himself a technology leader, choosing the best people possible, encouraging and prodding them, and making the final call on product design.



Steven P. Jobs introduced the iPhone 4 in San Francisco in 2010. Jim Wilson/The New York Times

It was an executive style that had evolved. In his early years at Apple, his meddling in tiny details maddened colleagues, and his criticism could be caustic and even humiliating. But he grew to elicit extraordinary loyalty.

“He was the most passionate leader one could hope for, a motivating force without parallel,” wrote Steven Levy, author of the 1994 book “Insanely Great,” which chronicles the creation of the Mac. “Tom Sawyer could have picked up tricks from Steve Jobs.”

“Toy Story,” for example, took four years to make while Pixar struggled, yet Mr. Jobs never let up on his colleagues. ““You need a lot more than vision — you need a stubbornness, tenacity, belief and patience to stay the course,” said Edwin Catmull, a computer scientist and a co-founder of Pixar. “In Steve’s case, he pushes right to the edge, to try to make the next big step forward.”

Mr. Jobs was the ultimate arbiter of Apple products, and his standards were exacting. Over the course of a year he tossed out two iPhone prototypes, for example, before approving the third, and began shipping it in June 2007.

To his understanding of technology he brought an immersion in popular culture. In his 20s, he dated Joan Baez; Ella Fitzgerald sang at his 30th birthday party. His worldview was shaped by the ’60s counterculture in the San Francisco Bay Area, where he had grown up, the adopted son of a Silicon Valley machinist. When he graduated from high school in Cupertino in 1972, he said, “the very strong scent of the 1960s was still there.”

After dropping out of Reed College, a stronghold of liberal thought in Portland, Ore., in 1972, Mr. Jobs led a countercultural lifestyle himself. He told a reporter that taking LSD was one of the two or three most important things he had done in his life. He said there were things about him that people who had not tried psychedelics — even people who knew him well, including his wife — could never understand.

Decades later he flew around the world in his own corporate jet, but he maintained emotional ties to the period in which he grew up. He often felt like an outsider in the corporate world, he said. When discussing the Silicon Valley’s lasting contributions to humanity, he mentioned in the same breath the invention of the microchip and “The Whole Earth Catalog,” a 1960s counterculture publication.

Apple’s very name reflected his unconventionality. In an era when engineers and hobbyists tended to describe their machines with model numbers, he chose the name of a fruit, supposedly because of his dietary habits at the time.

Coming on the scene just as computing began to move beyond the walls of research laboratories and corporations in the 1970s, Mr. Jobs saw that computing was becoming personal — that it could do more than crunch numbers and solve scientific and business problems — and that it could even be a force for social and economic change. And at a time when hobbyist

computers were boxy wooden affairs with metal chassis, he designed the Apple II as a sleek, low-slung plastic package intended for the den or the kitchen. He was offering not just products but a digital lifestyle.

He put much stock in the notion of “taste,” a word he used frequently. It was a sensibility that shone in products that looked like works of art and delighted users. Great products, he said, were a triumph of taste, of “trying to expose yourself to the best things humans have done and then trying to bring those things into what you are doing.”

Regis McKenna, a longtime Silicon Valley marketing executive to whom Mr. Jobs turned in the late 1970s to help shape the Apple brand, said Mr. Jobs’s genius lay in his ability to simplify complex, highly engineered products, “to strip away the excess layers of business, design and innovation until only the simple, elegant reality remained.”

Mr. Jobs’s own research and intuition, not focus groups, were his guide. When asked what market research went into the iPad, Mr. Jobs replied: “None. It’s not the consumers’ job to know what they want.”

## Early Interests

Steven Paul Jobs was born in San Francisco on Feb. 24, 1955, and surrendered for adoption by his biological parents, Joanne Carole Schieble and Abdulfattah Jandali, a graduate student from Syria who became a political science professor. He was adopted by Paul and Clara Jobs.

The elder Mr. Jobs, who worked in finance and real estate before returning to his original trade as a machinist, moved his family down the San Francisco Peninsula to Mountain View and then to Los Altos in the 1960s.

Mr. Jobs developed an early interest in electronics. He was mentored by a neighbor, an electronics hobbyist, who built Heathkit do-it-yourself electronics projects. He was brash from an early age. As an eighth grader, after discovering that a crucial part was missing from a frequency counter he was assembling, he telephoned William Hewlett, the co-founder of Hewlett-Packard. Mr. Hewlett spoke with the boy for 20 minutes, prepared a bag of parts for him to pick up and offered him a job as a summer intern.

Mr. Jobs met Mr. Wozniak while attending Homestead High School in neighboring Cupertino. The two took an introductory electronics class there.

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The spark that ignited their partnership was provided by Mr. Wozniak's mother. Mr. Wozniak had graduated from high school and enrolled at the University of California, Berkeley, when she sent him an article from the October 1971 issue of Esquire magazine. The article, "Secrets of the Little Blue Box," by Ron Rosenbaum, detailed an underground hobbyist culture of young men known as phone phreaks who were illicitly exploring the nation's phone system.

Mr. Wozniak shared the article with Mr. Jobs, and the two set out to track down an elusive figure identified in the article as Captain Crunch. The man had taken the name from his discovery that a whistle that came in boxes of Cap'n Crunch cereal was tuned to a frequency that made it possible to make free long-distance calls simply by blowing the whistle next to a phone handset.

Captain Crunch was John Draper, a former Air Force electronic technician, and finding him took several weeks. Learning that the two young hobbyists were searching for him, Mr. Draper had arranged to come to Mr. Wozniak's Berkeley dormitory room. Mr. Jobs, who was still in high school, had traveled to Berkeley for the meeting. When Mr. Draper arrived, he entered the room saying simply, "It is I!"

Based on information they gleaned from Mr. Draper, Mr. Wozniak and Mr. Jobs later collaborated on building and selling blue boxes, devices that were widely used for making free — and illegal — phone calls. They raised a total of \$6,000 from the effort.

After enrolling at Reed College in 1972, Mr. Jobs left after one semester, but remained in Portland for another 18 months auditing classes. In a commencement address given at Stanford in 2005, he said he had decided to leave college because it was consuming all of his parents' savings.

Leaving school, however, also freed his curiosity to follow his interests. "I didn't have a dorm room," he said in his Stanford speech, "so I slept on the floor in friends' rooms, I returned Coke bottles for the 5-cent deposits to buy food with, and I would walk the seven miles across town every Sunday night to get one good meal a week at the Hare Krishna temple. I loved it. And much of what I stumbled into by following my curiosity and intuition turned out to be priceless later on."

He returned to Silicon Valley in 1974 and took a job there as a technician at Atari, the video game manufacturer. Still searching for his calling, he left after several months and traveled to India with a college friend, Daniel Kottke, who would later become an early Apple employee. Mr. Jobs returned to Atari that fall. In 1975, he and Mr. Wozniak, then working as an engineer at H.P., began attending meetings of the Homebrew Computer Club, a hobbyist group that met at

the Stanford Linear Accelerator Center in Menlo Park, Calif. Personal computing had been pioneered at research laboratories adjacent to Stanford, and it was spreading to the outside world.

“What I remember is how intense he looked,” said Lee Felsenstein, a computer designer who was a Homebrew member. “He was everywhere, and he seemed to be trying to hear everything people had to say.”

Mr. Wozniak designed the original Apple I computer simply to show it off to his friends at the Homebrew. It was Mr. Jobs who had the inspiration that it could be a commercial product.

In early 1976, he and Mr. Wozniak, using their own money, began Apple with an initial investment of \$1,300; they later gained the backing of a former Intel executive, A. C. Markkula, who lent them \$250,000. Mr. Wozniak would be the technical half and Mr. Jobs the marketing half of the original Apple I Computer. Starting out in the Jobs family garage in Los Altos, they moved the company to a small office in Cupertino shortly thereafter.

In April 1977, Mr. Jobs and Mr. Wozniak introduced Apple II at the West Coast Computer Faire in San Francisco. It created a sensation. Faced with a gaggle of small and large competitors in the emerging computer market, Apple, with its Apple II, had figured out a way to straddle the business and consumer markets by building a computer that could be customized for specific applications.

Sales skyrocketed, from \$2 million in 1977 to \$600 million in 1981, the year the company went public. By 1983 Apple was in the Fortune 500. No company had ever joined the list so quickly.

The Apple III, introduced in May 1980, was intended to dominate the desktop computer market. I.B.M. would not introduce its original personal computer until 1981. But the Apple III had a host of technical problems, and Mr. Jobs shifted his focus to a new and ultimately short-lived project, an office workstation computer code-named Lisa.

### **An Apocalyptic Moment**

By then Mr. Jobs had made his much-chronicled 1979 visit to Xerox’s research center in Palo Alto, where he saw the Alto, an experimental personal computer system that foreshadowed modern desktop computing. The Alto, controlled by a mouse pointing device, was one of the first computers to employ a graphical video display, which presented the user with a view of documents and programs, adopting the metaphor of an office desktop.

“It was one of those sort of apocalyptic moments,” Mr. Jobs said of his visit in a 1995 oral history interview for the Smithsonian Institution. “I remember within 10 minutes of seeing the graphical user interface stuff, just knowing that every computer would work this way someday. It was so obvious once you saw it. It didn’t require tremendous intellect. It was so clear.”

In 1981 he joined a small group of Apple engineers pursuing a separate project, a lower-cost system code-named Macintosh. The machine was introduced in January 1984 and trumpeted during the Super Bowl telecast by a 60-second commercial, directed by Ridley Scott, that linked I.B.M., then the dominant PC maker, with Orwell's Big Brother.

A year earlier Mr. Jobs had lured Mr. Sculley to Apple to be its chief executive. A former Pepsi-Cola chief executive, Mr. Sculley was impressed by Mr. Jobs's pitch: "Do you want to spend the rest of your life selling sugared water, or do you want a chance to change the world?"

He went on to help Mr. Jobs introduce a number of new computer models, including an advanced version of the Apple II and later the Lisa and Macintosh desktop computers. Through them Mr. Jobs popularized the graphical user interface, which, based on a mouse pointing device, would become the standard way to control computers.

But when the Lisa failed commercially and early Macintosh sales proved disappointing, the two men became estranged and a power struggle ensued, and Mr. Jobs lost control of the Lisa project. The board ultimately stripped him of his operational role, taking control of the Lisa project away from him, and 1,200 Apple employees were laid off. He left Apple in 1985.

"I don't wear the right kind of pants to run this company," he told a small gathering of Apple employees before he left, according to a member of the original Macintosh development team. He was barefoot as he spoke, and wearing blue jeans.

That September he announced a new venture, NeXT Inc. The aim was to build a workstation computer for the higher-education market. The next year, the Texas industrialist H. Ross Perot invested \$20 million in the effort. But it did not achieve Mr. Jobs's goals.

Mr. Jobs also established a personal philanthropic foundation after leaving Apple but soon had a change of heart, deciding instead to spend much of his fortune — \$10 million — on acquiring Pixar, a struggling graphics supercomputing company owned by the filmmaker George Lucas.

The purchase was a significant gamble; there was little market at the time for computer-animated movies. But that changed in 1995, when the company, with Walt Disney Pictures, released "Toy Story." That film's box-office receipts ultimately reached \$362 million, and when Pixar went public in a record-breaking offering, Mr. Jobs emerged a billionaire. In 2006, the Walt Disney Company agreed to purchase Pixar for \$7.4 billion. The sale made Mr. Jobs Disney's largest single shareholder, with about 7 percent of the company's stock.

His personal life also became more public. He had a number of well-publicized romantic relationships, including one with the folk singer Joan Baez, before marrying Laurene Powell. In 1996, his sister Mona Simpson, a novelist, threw a spotlight on her relationship with Mr. Jobs in the novel "A Regular Guy." The two did not meet until they were adults. The novel centered on a Silicon Valley entrepreneur who bore a close resemblance to Mr. Jobs. It was not an entirely flattering portrait. Mr. Jobs said about a quarter of it was accurate.

“We’re family,” he said of Ms. Simpson in an interview with The New York Times Magazine. “She’s one of my best friends in the world. I call her and talk to her every couple of days.”

His wife and Ms. Simpson survive him, as do his three children with Ms. Powell, his daughters Eve Jobs and Erin Sienna Jobs and a son, Reed; another daughter, Lisa Brennan-Jobs, from a relationship with Chrisann Brennan; and another sister, Patti Jobs.

## **Return to Apple**

Eventually, Mr. Jobs refocused NeXT from the education to the business market and dropped the hardware part of the company, deciding to sell just an operating system. Although NeXT never became a significant computer industry player, it had a huge impact: a young programmer, Tim Berners-Lee, used a NeXT machine to develop the first version of the World Wide Web at the Swiss physics research center CERN in 1990.

In 1996, after unsuccessful efforts to develop next-generation operating systems, Apple, with Gilbert Amelio now in command, acquired NeXT for \$430 million. The next year, Mr. Jobs returned to Apple as an adviser. He became chief executive again in 2000.

Shortly after returning, Mr. Jobs publicly ended Apple’s long feud with its archrival Microsoft, which agreed to continue developing its Office software for the Macintosh and invested \$150 million in Apple.

Once in control of Apple again, Mr. Jobs set out to reshape the consumer electronics industry. He pushed the company into the digital music business, introducing first iTunes and then the iPod MP3 player. The music arm grew rapidly, reaching almost 50 percent of the company’s revenue by June 2008.

In 2005, Mr. Jobs announced that he would end Apple’s business relationship with I.B.M. and Motorola and build Macintosh computers based on Intel microprocessors.

His fight with cancer was now publicly known. Apple had announced in 2004 that Mr. Jobs had a rare but curable form of pancreatic cancer and that he had undergone successful surgery. Four years later, questions about his health returned when he appeared at a company event looking gaunt. Afterward, he said he had suffered from a “common bug.” Privately, he said his cancer surgery had created digestive problems but insisted they were not life-threatening.

Apple began selling the iPhone in June 2007. Mr. Jobs’s goal was to sell 10 million of the handsets in 2008, equivalent to 1 percent of the global cellphone market. The company sold 11.6 million.

Although smartphones were already commonplace, the iPhone dispensed with a stylus and pioneered a touch-screen interface that quickly set the standard for the mobile computing market. Rolled out with much anticipation and fanfare, iPhone rocketed to popularity; by the end of 2010 the company had sold almost 90 million units.



Although Mr. Jobs took just a nominal \$1 salary when he returned to Apple, his compensation became the source of a Silicon Valley scandal in 2006 over the backdating of millions of shares of stock options. But after a company investigation and one by the Securities and Exchange Commission, he was found not to have benefited financially from the backdating and no charges were brought.

The episode did little to taint Mr. Jobs's standing in the business and technology world. As the gravity of his illness became known, and particularly after he announced he was stepping down, he was increasingly hailed for his genius and true achievement: his ability to blend product design and business market innovation by integrating consumer-oriented software, microelectronic components, industrial design and new business strategies in a way that has not been matched.

If he had a motto, it may have come from "The Whole Earth Catalog," which he said had deeply influenced him as a young man. The book, he said in his commencement address at Stanford in 2005, ends with the admonition "Stay Hungry. Stay Foolish."

"I have always wished that for myself," he said.

**Correction: Oct. 7, 2011**

*An earlier version of this obituary misstated the year in which NeXT shifted its focus from the education to the business market as 1986.*

**Correction: Oct. 7, 2011**

*An obituary on Thursday about Steven P. Jobs, the co-founder of Apple, misidentified, in some editions and at one point, the city in California where he went to high school. It is Cupertino, not Los Altos.*

**Correction: Oct. 12, 2011**

*A front-page obituary on Thursday about Steve Jobs, the co-founder of Apple, omitted a credit. Steve Lohr contributed reporting.*

Steve Lohr contributed reporting.

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